



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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OFFICE OF  
PREVENTION, PESTICIDES, AND  
TOXIC SUBSTANCES

OPP OFFICIAL RECORD  
HEALTH EFFECTS DIVISION  
SCIENTIFIC DATA REVIEWS  
EPA SERIES 361

**MEMORANDUM**

SUBJECT: **2,4-DB.** Results of the 1/16/96 Meeting of the HED Metabolism Committee.  
DP Barcode No.: D221954; CBRS No. 16665; No MRID No.; Rereg. Case No. 0196.

FROM: David J. Miller, HSO, US Public Health Service *DJM*  
Chemistry Pilot Review Team  
Chemistry Branch II--Reregistration Support  
Health Effects Division (7509C)

THRU: Edward Zager, Chief *EZager*  
Chemistry Branch II--Reregistration Support  
Health Effects Division (7509C)

TO: HED Metabolism Committee

**A. Individuals in Attendance****1. Metabolism Committee: (signatures indicate concurrence unless otherwise stated)**

Karl Baetke

Richard Loranger

Michael Metzger

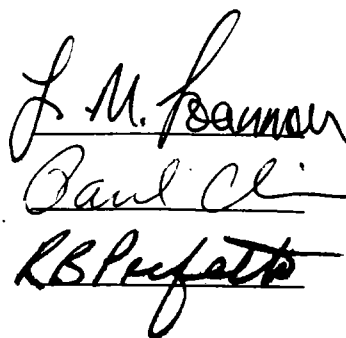
Alberto Protzel

William Burnham

Mike Iannou

Paul Chin

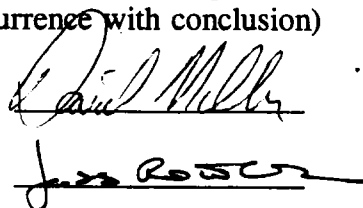
Randy Perfetti



2. Scientists (non-committee members responsible for data presentations; signatures indicate concurrence with conclusion)

David Miller

Jesse Rowland



## B. Background

Tolerances currently exist under 40 CFR 180.331 for combined residues of 2,4-DB and its 2,4-D metabolite in a variety of plant commodities. No tolerances currently exist for this pesticide in meat, milk, poultry, or egg products.

The 2,4-DB Reregistration Standard (2/1/88) concluded that the qualitative nature of the residue of 2,4-DB in animals and plants was not adequately understood, and required that data be submitted depicting the metabolism of ring-labeled [ $^{14}\text{C}$ ]2,4-DB in plants and animals. In response, the 2,4-DB Task Force submitted data in 1993 on metabolism in alfalfa, peanuts, soybeans, laying hens, and lactating goats. CBRS has reviewed this information and concluded that the nature of the residue in plants and animals is understood (D. Miller, CBRS Nos. 12753, 12931, and 12963, DP Barcodes D196291, D197243, D197685, currently under review).

The HED Metabolism Committee has previously reviewed similar questions with respect to the herbicide 2,4-D as well as with the herbicide MCPB (2-methyl-4-chlorophenoxy butyric acid), a ring-substituted analogue of 2,4-DB. In the former case, the Metabolism Committee concluded that the residue to be regulated in wheat and similar crops and well as in animal products was parent 2,4-D *per se*, while in the latter case, the Committee concluded that the residues of concern for both tolerance and risk assessment are both parent MCPB and its 4-chloro-2-methyl phenoxy acetic acid metabolite.

Given recently submitted plant and animal metabolism data for 2,4-DB, the Committee was asked the following two questions:

1. In plant commodities, which residues of 2,4-DB should be regulated?
2. In ruminant and poultry commodities, which residues of 2,4-D should be regulated?

#### C. Discussion

The Committee discussed the metabolites of 2,4-D and examined the tables provided which summarized and compared the results of the plant, ruminant, and poultry metabolism studies. It was noted that 2,4-DB parent appeared as the major compound in many of the plant and animal matrices, and the 2,4-D metabolite was present at only low levels. It was further noted that 1,4-benzoquinone appeared as a major metabolite only in soybean hay, pods, and vines.

The Committee also indicated that its previous decision regarding the herbicide MCPB (a ring substituted analogue of 2,4-DB) to regulate both parent MCPB and its 4-chloro-2-methyl phenoxy acetic acid metabolite (the 2,4-D analogue) was based on the presence of significant amounts of metabolite: in the present case with 2,4-DB, significant concentrations of the 2,4-D metabolite were not present and therefore regulation of this metabolite was not warranted.

#### D. Conclusion

The Committee concluded that the residues of 2,4-DB to be regulated in plants and animals are residues of 2,4-DB *per se*; the 2,4-D metabolite should be dropped from the current tolerance expression. The Committee also concluded that the presence of benzoquinone in soybean hay, pods, and vines would not be of significant concern since these are animal feed items: if additional crops with human food uses are registered, CBRS may require that additional metabolism studies be performed.

cc: RF, SF, List A F., Circ., J. Rowland (TOX), DJM.  
RDI: RPerfetti:1/17/96,EZager:1/17/96.



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<b>HED File Code</b>	11000 Chemistry Reviews
<b>Memo Date:</b>	01/29/1996
<b>File ID:</b>	DPD221954; DPD196291; DPD197243; DPD197685
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